DCS 6000

User Manual

Digital Conference System

DCS 6000 Conference Units

Danish Interpretation Systems **DIS**

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Important

Compliancy

The equipment has been tested and found to comply with the limits of the following norms and approvals:

- EN55013 of 2001 (emission)
- EN55020 of 2002 (immunity)
- EN60065 of 1998

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the user manual it may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Installation precautions

Allow adequate air circulation to prevent internal heat built-up.

Do not install the units in a location near heat sources such as radiators or air ducts, or in a place exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock.

To avoid moisture condensations do not install the unit where the temperature may rise rapidly.

Cleaning

To keep the cabinet in its original condition, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use organic solvents such as thinners or abrasive cleaners since these will damage the cabinet.

Repacking

Save the original shipping carton and packing material; they will become handy if you ever have to ship the unit. For maximum protection, re-pack the unit as originally packed from the factory.

Warranty

The individual units in the DCS 6000 system are minimum covered by 24 months warranty against defects in materials or workmanship.

Description of the DCS 6000 system

Features

The DCS 6000 system has the following main features:

- Fully digital
- Excellent sound quality
- "State of the Art" fully digital integrated interpretation, discussion and voting system offering interpretation, language distribution, and conference microphone and voting facilities with attendance check with Chip Card ™.
- Unique digital DATA and AUDIO bus.
- 39 incoming channels (8 floor channels + 31 interpreted channels)
- 34 distributed channel (3 x floor + 31 interpreted channels)
- The Delegate and Interpreter units are powered and controlled by the CU 60xx Central Unit, which drives up to app. 200 units on 4 chains.
- EX 6010 Extension Units or PS 6000 Power Supplies available if more units are required
- A total of 4000 units (delegate or interpreter units) can be connected to the system.
- Using screened CAT5 cabling (FTP or STP) ensuring a very cost effective installation and easy set-up of portable systems
- Firmware in Delegate units, Interpreter Units, Central Units etc. upgradeable through RS232 on Central Unit
- Can be operated with or without a PC.
- Added functionality and comprehensive features provided by SW 6000 software package running on PC
- RS232/RS422 connection on the CU 60xx for external operation of the system of a PC or control system such as AMX or Crestron System components

The DCS 6000 system consists of various units in addition to the Conference Units.

Central equipment & Interpreter equipment

CU 60xx	Central Unit with built-in DCS-LAN and power supply
EX 6010	Extension Unit
PS 6000	Power Supply
RP 6004	Repeater for four chains
AO 6004	Audio Output Unit
AO 6008	Audio Output Unit
JB 6002	Junction Box with 2 outputs
JB 6004	Junction Box with 4 outputs
IS 6132P	Interpreter Set
LS 6132P	Interpreter Loudspeaker
CS 6032F	Channel Selector (flush mounted)

Note: Functionalities related to using the discontinued CU 6000 Central Unit are not described in this manual as most of the units described are not supported by the CU 6000 Central Unit

Operating instructions

DCS 6000 Conference Units

General description

The DCS 6000 Conference Units are fully digital microcomputer controlled conference units. All units include a DSP processor (Digital Signal Processing).

The DCS 6000 Conference Units offers full compatibility with the DCS 6000 Digital Conference System with the CU 60xx & EX 6010 Central and Extension Units.

Features

The Conference Units offers i.e. the following features (the features depends on the version):

- Fixed or detachable microphone
- ON/OFF button
- Built-in loudspeaker
- Language selector
- Voting
- Chip Card reader

Conference Units description

Most conference units are delivered in a Chairman (CM) version and a Delegate (DM) version.

This manual describes the functionality of the following units:

DM 6010P	**Portable Conference Unit** Facilities: Fixed gooseneck and loudspeaker	

CM/DM 6070P	**Portable Conference Unit** Facilities: Fixed gooseneck, loudspeaker, two built-in channel selectors and two headphone connectors. ***Note: If the two channel selectors are in use (headphones inserted), the loudspeaker is disabled.***	
CM/DM 6090P	**Portable Conference Unit** Facilities: XLR microphone connector, loudspeaker, two built-in channel selectors and two headphone connectors. ***Note: If the two channel selectors are in use (headphones inserted), the loudspeaker is disabled.***	

CM/DM 6060F	**Flush Mounted Conference Unit** Facilities: Fixed gooseneck, loudspeaker, one built-in channel selector and one headphone connector.	
CM/DM 6510F	**Flush Mounted Conference Unit** Facilities: Fixed gooseneck, loudspeaker, 3 voting buttons and Chip-card reader.	

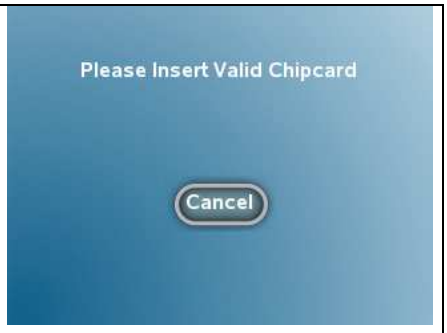
CM/DM 6560F	**Flush Mounted Conference Unit** Facilities: Fixed gooseneck, loudspeaker, 3 voting buttons, Chip-card reader, one built-in channel selector and one headphone connector.	
MU 6040 C/D	**Microphone Unit** Available in Delegate (D) and Chairman (C) version The MU 6040 Microphone Unit is designed for hidden installation, e.g. in an armrest, under a table or in a floor box for use with FD/FC series of front plates with Loudspeaker, Microphone and Buttons or for use with HD 4042 Hand Microphone. The MU 6040 is provided with a HD 15S connector for connection of the FD/FC front plate. The MU 6040 may also be used to switch on and off a loudspeaker in PA system with separate amplification (e.g. a 100V system) via an external relay. The MU 6040 operates in the same modes as described for the other units.	

MU 6042D	**Dual Microphone Unit** The MU 6042D Microphone Unit is designed for hidden installation, e.g. in an armrest, under a table or in a floor box for use with FD/FC series of front plates with Loudspeaker, Microphone and Buttons. ***Note: The MU 6042D does not support using HD 4042 Hand Microphone.*** The MU 6042D is provided with a HD 15S connector for connection of the FD/FC front plate for use with two delegates like FD 6012F featuring Mic On-Off/Request buttons for two delegates. ***Note: The MU 6042D operates in the same modes as described for the other units except the VOX mode.***	

AM 6040	**Ambient Noise Microphone** The AM 6040 Ambient Microphone Unit is designed to detect ambient noise in a conference room. The purpose of an ambient noise microphone is to provide sound from a meeting room/conference hall, when there is no speaker/chairman active using their microphones. The microphone should be placed in a central position in the room, but not too close to anyone; thereby the microphone is able to pick up sound from activities in the room/hall (chairs being moved, paper being picked up, low voices and so on). Transmission of ambient noise rather than transmitting no sound at all is a desirable feature from listeners attending the meeting via headphones. The ambient noise indicates to the listeners, that there is no speaking activity going on, and this information is very nice to have, when interpreters are doing interpretation, and the speaker stops speaking. The AM 6040 Ambient Microphone Unit is designed for installation above a recessed ceiling for connection to an external microphone like DIS model HM 4042 or GM 652x series of gooseneck microphones. The AM 6040 is delivered in a shielded metal mounting box like the MU 6040. • Automatic activation of the microphone, if no Chairman or delegate units are turned ON and the LineIn Volume (LineIn>Loudspk) is set to OFF. • Setting of the volume of the ambient noise audio level on the CU 60xx. ***Note: One ambient noise microphone can be active in the DCS6000 system at one time.***	

DC 6990P	**Conference Unit** Facilities: 3.5'' LCD colour touch screen, lockable XLR microphone connector, chip card reader, loudspeaker, two built-in channel selectors and two headphone connectors. The headphone connectors are designed for use headphones with stereo plug like the DH 6021. Configurable as Chairman Unit (CM), Delegate Unit (DM) and Dual Delegate Unit **Quick Start Guide** To activate the unit: 1. Press the LCD touch screen 2. Login using code or chip card if requested 3. Navigate on the Main screen using the control buttons 4. Navigate to other screens using the Menu button **Start-up screen** When the unit is powered up an initialisation and start-up screen appears. It includes the conference name if a conference has been started in the SW 6000. It also includes a delegate name if the conference is running with 'prepared delegate list' or 'login using code and name' mode. Press the touch screen to enter.	 **Start-up screen with conference name and delegate name**

If a conference requiring chip card is running, the user is prompted to insert chip card before being granted access.



Login using chip card

If a conference requiring login code is running, the user is prompted to enter the code on the touch screen before being granted access.

Login using code

Main screen

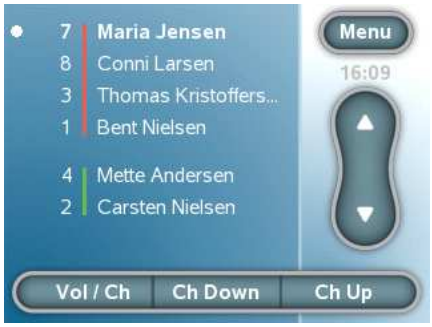
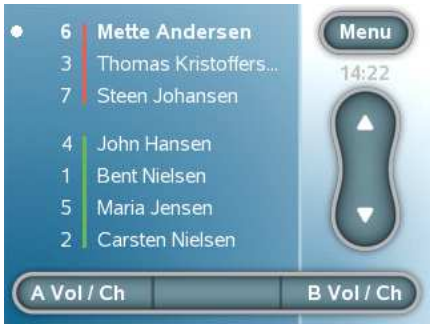
When the user leaves the start-up screen, the main screen appears.

It includes a combined speaker and request list with scroll functionality.

The Menu button provides access to a Menu overview with extended functionality.

A digital clock is available when using the SW 6000.

Three different multi-functional software buttons are available for the CM and DM at the bottom of the screen.

	The CM includes the microphone handling buttons: • All Del Off/All Req Off (active when the indicator is on the speaker and the request list, respectively) • Exclusive • Next On/Mic On/Mic Off (active when the indicator is on the first request on the request list, on the remaining requests on the request list and on any speaker on the speaker list, respectively) The DM includes the volume control and channel selector buttons: • Vol/Ch (toggle button that changes the functionality of the two other buttons) • Vol Down/Ch Down • Vol Up/Ch Up The Dual DM includes two selection buttons for Delegate A and B's volume control and channel selector buttons: • A Vol/Ch (selection button for Delegate A's volume control and channel selector) • B Vol/Ch (selection button for Delegate B's volume control and channel selector)	 **CM Main screen**  **DM Main screen**  **Dual DM Main screen**

Menu screen

When the user presses the Menu button, the menu screen with a menu overview appears. The overview gives access to extended functionality depending on whether it is running stand-alone or with the SW 6000:

CM (stand-alone): Voting, Results, Audio, Logout

CM (SW 6000): Conference, Voting, Agenda, Results, Audio, Logout

DM (stand-alone): Results, Results, Logout

DM (SW 6000): Agenda, Results, Logout

Dual DM (stand-alone): Results, Results, Logout

Dual DM (SW 6000): Agenda, Results, Logout

CM Menu screen (SW 6000)

DM and Dual DM Menu screen (SW 6000)

Conference menu

The Conference menu displays the available conferences on a list form. The CM can start and stop a conference using the start/stop conference button.

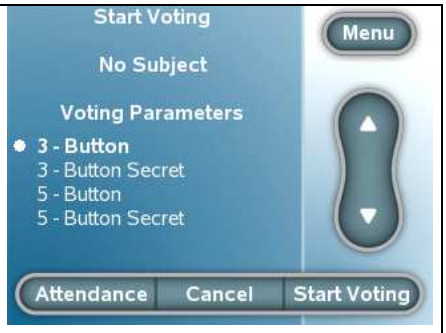
Conference menu – start conference

Conference menu – stop conference

Voting menu

The Voting menu displays the available voting parameters. In stand-alone four parameters are available while with the SW 6000 all the parameters defined in the CAA will be available.

The CM can scroll in the list using the scroll buttons and start a selected voting session or attendance check.



Voting menu (stand-alone)

Voting menu (SW 6000)

Agenda menu

The Agenda menu displays the agenda for an active conference. The agenda is created in the CAA.

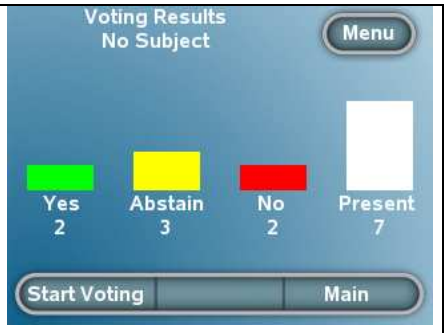
The CM can set a subject on the agenda and start a voting session or attendance check by using the 'Set Subject' and 'Start Voting' buttons.

Agenda menu - no set subject

Agenda menu – set subject

Results menu

The Results menu displays the latest voting or attendance check result.



CM Results menu

DM Results menu

Dual DM Results menu

Audio menu

The Audio menu contains volume and channel settings.

Audio menu

Logout menu

The Logout menu allows the user to logout and return to the Start-up screen.

Logout menu

Voting

The Voting screen is automatically displayed on all units when a voting session or attendance check is started. Users with voting right can cast their vote.

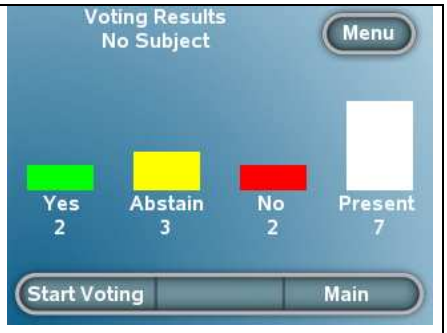
CM Voting screen

DM Voting screen

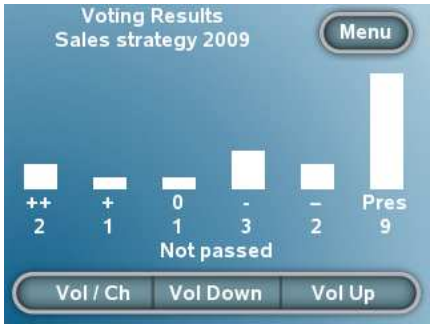
Dual DM Voting screen

Results

The Results screen is displayed on all units when a voting session or attendance check is stopped. It displays the latest voting or attendance check result.



CM Results screen



DM Results screen

Dual DM Results screen

Setup menu

The Setup menu can be accessed by holding down the scroll down button and then pressing the left push button. It contains access to extended setup functionality: Unit Type, Left Btn., Comm. Stat., and Unit Status.

Setup menu

Unit Type

The Unit Type menu gives access to changing the unit type by selecting the desired unit type and exiting the menu. The CU has to be restarted in order for the changes to become effective.

Unit type screen

Left Btn.

The Left Btn. menu gives access to changing the functionality of the left push button by selecting the desired function and exiting the menu. The CU has to be restarted in order for the changes to become effective.

Left Btn. screen

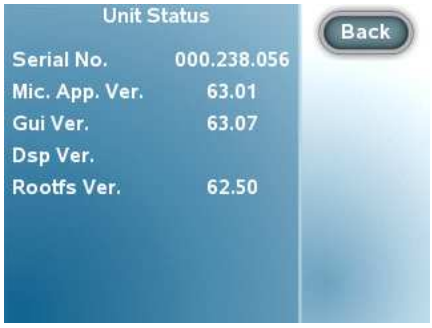
Comm. Stat

The Comm. Stat. menu gives access to an overview of the communication errors. The counters should be 0 though the Tx Retries may increase slightly during start-up and if two delegates press their speak button simultaneously.

Comm. Stat. screen

Unit Status

The Unit Status menu gives access to an overview of the serial number plus current firmware versions of the unit.



Unit Status screen

Microphone functionality

Microphone functionality is a feature where participant in a conference can use a microphone in a DCS 6000 Conference Unit to address an audience. The sound from a conference microphone is called the 'Floor' sound.

The 'Floor' sound can then be listened to in built-in loudspeakers in the DCS 6000 Conference Units, in Language selectors, in Interpreter Sets or the sound can be feed to an external PA-system.

The number of allowed open microphones can be set at the CU 60xx however the sound from all the open microphones is mixed together in the 'Floor' sound.

User Controls & Indications

The following list shows the function of the facilities for using the microphone in the units. Please note, that not all facilities are available at all units:

- ***Speak button (delegate unit)***

Pressing the *Speak* button turns on the microphone or will place the microphone in the request queue (see 'Operation modes').

The 'Operation mode' determines the functions of this button.

- ***Speak button (chairman unit)***

Pressing the *Speak* button turns on the microphone

- ***Speak LED***

Lights up with a red colour when the microphone is ON

- ***Request LED***

Lights up with a green colour when the microphone is put in the request queue (see 'Operation modes').

- ***Delegate off/All del off button (chairman unit)***

Pressing the *Delegate off/All del off* button turns off all delegate microphones

- ***Delegate off/All del off LED (chairman unit)***

Lights up with a green colour when the button is pressed with the exception of the DC 6990P that lights up with a red colour in the first release

- ***Mute button***

Pressing the *Mute* button mutes the microphone while the button is activated without removing the right to speak

- ***Mute LED***

No LED

- ***Exclusive button (chairman unit)***

Pressing the *Exclusive* button mutes all delegate microphones and activates the chairman microphone while the button is activated

- ***Exclusive LED (chairman unit)***

Lights up with an orange colour when the button is activated however in the first release it will light up with a red colour

- ***Next on button (chairman unit)***

Pressing the *Next on* button turns on the first request on the request list

- ***Next on LED (chairman unit)***

Lights up with a red colour when the button is activated

- ***Microphone light ring***

Lights up with a red colour when the microphone is ON. If the microphone is muted, the light in the light ring is turned off during the time the unit is muted

Microphone connections

- ***XLR microphone connector***

The XLR microphone connector is used for connection of GM 652x series of gooseneck microphones. The HM 4042 Hand Microphone can also be connected. However the button on the hand microphone will not work.

- ***Mini-DIN microphone connector (only "F" models)***

A Mini-DIN microphone connector is located at the back for connection of FD/FC front plates with GM 65xx F series of gooseneck microphones. The HM 4042 Hand Microphone can also be connected.

This connecter is intended for use, where the connection to the microphone is remotely from the front plate, which is only on customised units.

- ***HD 15S connector (only MU 604x models)***

The HD 15S is used for direct remote connection of FD/FC series of front plates or Microphones (e.g. HM 4042 or GM 652x in external outlet) or/and microphone control buttons, LED indicators and loudspeaker. Please refer to the technical section for pin layout

Important: The microphone input at the above mentioned connectors does only support DIS microphones and do not support other types of microphones i.e. third part microphones.

Operation modes

System modes

The 6000 series microphones work in different modes - according to the settings of the system.

The "System Operation Mode" also called 'CU mode' determines the behaviour of the microphone system. The mode is set on the CU 60xx..

The following modes are available when the CU 60xx runs standalone (PC with SW 6000 has never been connected):

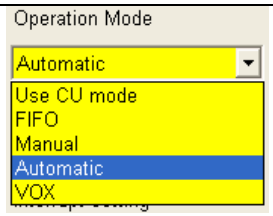
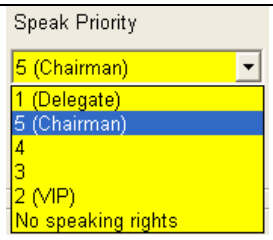
Automatic	Auto (or Automatic) mode allows for the microphone units to be switched on immediately upon pressing the microphone ON/OFF button. This is indicated by a red light in the 'Speak' lamp in the microphone unit. Pressing the microphone ON/OFF button again will turn the microphone off. If the 'maximum speakers (delegates)' is reached, the speak request will be rejected. Microphones with Chairman priority will always be turned on (a Chairman Unit is always in Auto or VOX mode).
FIFO	FIFO is an automated mode. The microphone unit functions in the same way as in *automatic* mode as long as the number of turned on delegate units is less or equal to the selected 'maximum speakers'. When the maximum number is reached, the next delegate pressing the *ON/OFF* button will be put in the top of the request queue. The green 'Request' lamp flashing indicates this. More delegates will be put in the request queue when they press their ON/OFF buttons, until the maximum of requests is reached. Their green 'Request' lamps will light up steadily. When one of the active microphone units is switched off, the first delegate unit in the queue is automatically switched ON, and the next delegate unit in the queue will flash with the green 'Request' lamp. This mode will normally be used with only 1 as maximum speakers. Microphones with Chairman priority will always be turned on directly.
Manual	Manual mode features a request list, where 'Delegates' are inserted in a queue upon pressing the microphone ON/OFF button. This is confirmed by green light in the 'Request' lamp in the delegate unit. It is possible to cancel the request by pressing the button again. The microphone can only be switched on from a PC running SW 6000 software, from the DC 6990 (Chairman unit) or from a control system like AMX or Crestron. This will be indicated by red light in the 'Speak' lamp in the microphone unit. At this point the delegate can switch off the microphone by pressing the ON/OFF microphone button. Microphones with Chairman priority will always be turned on directly.

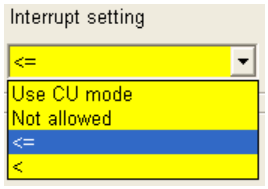
VOX	VOX, voice activation mode, allows for the microphone units to be switched on automatically if speaking in the microphone or by pressing the microphone ON/OFF button. This is indicated by a red light in the 'Speak' lamp in the microphone unit. Pressing the microphone ON/OFF button again will turn the microphone off. The microphone turns of automatically after finished talking after the time defined in the "Release Time" setting, which is normally 4 seconds. The microphone can also be turned off by pressing the ON/OFF button. A Chairman Unit is always in Auto or VOX mode. **Please note, that Dual Units (like MU 6042) and units operation in a 'Microphone Sharing' mode cannot run in VOX mode.**

Individual modes (only with SW 6000)

When using SW 6000 it is possible to set individual modes for the units.

The parameters can be set individual for each conference unit:

Operation Mode	Use CU mode, FIFO, Manual, Automatic or VOX.	
Speak Priority	Use CU mode, 5 (Chairman), 4, 3, 2 (VIP), 1(Delegate) or No Speaking Rights Chairman (5) is the highest priority and the microphone will always be turned on regardless of operation mode. In the Request list a unit with higher speak priority will be placed before a unit with lower speak priority.	

Interrupt Ability	The Interrupt setting determines the microphone's ability to interrupt another speaker if the maximum number of speakers is reached. The key is as follows: Use CU mode Not allowed: Cannot interrupt another speaker. <=: Can interrupt a speaker with the same speak priority or a speak priority which is less than own speak priority. < : Can interrupt a speaker with a speak priority less than own speak priority.	

For most installations, the 'Operation Mode' for all units is set to use the system mode 'Use CU mode'. It means that the operation mode for the units is following the system modes, i.e. if the system is running in 'Manual mode' the Delegates Units will run in Manual mode.

When assigning units to run 'Use CU modes' the modes are found in the following table:

Unit	**Operation mode**	**Speak priority**	**Interrupt ability**
Chairman	Automatic	5	<=
Delegate	Use CU mode	1	Use CU mode
VIP	Automatic	2	Use CU mode

However for certain application, it is desirable to assign 'individual operations mode', where the units will always follow the individual mode settings independently of the 'System Setting'.

I.e. the following 'Units' can be created:

Unit	**Operation mode**	**Speak priority**	**Interrupt ability**
No Speaking Rights	Does not matter	0	Does not matter
VIP unit	Automatic	3	<
Secretary	Automatic	2	<
Delegate FIFO This unit will interrupts other delegates if the 'Maximum speaker' are reached	Use CU Mode		<=

Speaker stand This unit can always turn on except if 8 units with 'Speak priority"=5 is open	Automatic	4	<=

Saving setting in CU 60xx

If individual settings are to remain in the units after the SW 6000 is closed, the settings can be stored in the CU 60xx by saving the setting.

When saving the configuration the changes in the settings, which have been done in the various menus in CU 60xx, at the IS 6132 Interpreter Sets, at AO 6004/6008 Audio Unit or in the Conference Units (Individual settings) will be saved in the 'Flash' memory in the CU 60xx.

Also the serial number and type of all units connected to the CU 60xx at the time of saving the configuration will be saved in the 'Flash' memory in the CU 60xx.

When 'loading' a configuration the last settings, which has been saved in the 'Flash' memory in the CU 60xx will be re-loaded to the CU 60xx, to the IS 6132 Interpreter Sets to the AO 6004/6008 Audio Unit and to the Delegate Units.

When switching the power to the CU 60xx OFF and then ON, the last saved setting will also be loaded.

Language Selection functionality

Language selection is a feature, where the delegate can listen to either the floor (spoken) language or an interpreted language.

User Controls & Indications

The units featuring language selection will include on or two sets of the following controls and interfaces.

- ***Display***

This display is used for information purposes. This display has built in back light.

- ***Channel buttons (two)***

The buttons are used for changing the channel setting.

- ***Volume buttons (two)***

The buttons are used for changing the volume setting.

Headphone connectors

- ***Headphone connector (mini-jack)***

A mini jack located on the front plate for connecting a headphone for listening to the floor language or one of the interpreted languages.

- ***Dual headphone connectors (mini-jack)***

Some units are supplied with two mini jacks located on the front plate for connecting a headphone for listening to the floor language or one of the interpreted languages.

Important:

For units, where the two channels are operated separately the following has to be observed:

If the two channel selectors are in use (headphones inserted), the loudspeaker is disabled with the exception of the DC 6990P.

- ***Headphone Connector (Molex) (only "F" models)***

A 2 pin Molex jack is located at the back for connecting a headphone for listening to the Floor language or one of the interpreted languages.

This connecter is intended for use, where the connection to the headphone is remotely from the front plate, which is only on customised units.

Normal Operation

Channel Selection

Channel selection is done using the channel up and channel down buttons. Channel numbers can be from 0 to 31, however the indication in the display is abbreviations of the language selected i.e. ENG for English, SWE for Swedish.

The lowest channel (0=FLO) always carries floor audio and all other channels carry interpreted languages (or floor if no interpretation is currently performed on this channel). If fewer than 32 channels are in use only available channels will be selectable from the channel selector – the channels are always numbered consecutively. Pressing the down button when the lowest channel number is displayed will cause the channel selection to wrap around to the highest available channel if the channel wrap parameter is set.

Holding the channel up or down button depressed will cause the channel numbers to scroll with a system defined start-up delay, and subsequent smaller delay between each change in channel position. These delays are set using system parameters.

Volume Control

Volume control is done using the volume up and volume down buttons. The number of volume levels and the step size in dB between successive levels is globally defined using system parameters – however setting the volume level to 0 turns the headphone/line output off.

When a volume button is depressed the channel display will be overridden with the current volume (this is indicated by the black dot in the upper left corner of the display) if the show volume global parameter is set. The display will continue to show the current volume level for a preset time interval before returning to displaying the channel information – this time interval is also set globally using a system parameter.

Voting functionality

Voting functionality is a feature where delegates can cast their votes to various subjects using the DCS 6000 Conference Units.

The voting functionality is only available when the system if expanded with a PC running SW 6000 Conference Management software with the module 'SW 6060 Parliamentary Voting and Agenda' or by using the DC 6990P.

The various voting modes and voting functionality in general is explained in the SW 6000 CAA User Manual and in the DC 6990P section. However the functionality directly related to the 'Control & Indications' in the units is explained here.

User Controls & Indications

The units featuring voting functionality will include the following controls and interfaces.

- ***Yes/Present (+) button***

Pressing this button casts a 'Yes' vote or show the user as 'Present' to the system.

- ***Abstain (0) button***

Pressing this button casts a 'Abstain' vote.

- ***No (-) button***

Pressing this button casts a 'no' vote.

- ***Yes/Present (+) LED***

This yellow LED flashes alone, when the user have to present himself to the system as 'Present'. When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote.

- ***Abstain (0) LED***

When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote.

- ***No (-) LED***

When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote..

Normal operation

Attendance check

When the yellow 'Yes/Present (+) LED' flashes alone, the user can to present him to the system as 'Present' by pressing the 'Yes/Present (+) button'.

Cast a vote

When all the yellow voting LED's flashes, the user can cast his vote, by pressing any of the three voting buttons.

The user can cast his vote or change a vote as long time as the voting session is on-going.

If the voting parameter is selected as 'Secret' (done in the SW 6000) the LED's stop flashing after the vote is caste, however the user can still change his vote if needed.

Chip Card functionality

Chip Card functionality is a feature where delegates identify themselves to the system by use of a DIS chip-card. The Chip Card contains information like Delegate ID, Login Code and Location ID, which the DCS 6000 system uses to identify the user of the Conference Unit by getting the personal details from the database in the SW 6000.

The Chip Card functionality is only available when the system if expanded with a PC running SW 6000 Conference Management software with the module 'SW 6070 Chip Card Login'.

The functionality in general is explained in the SW 6000 CAA User Manual. However the functionality directly related to the 'Control & Indications' in the units is explained here.

The use of Chip Cards

This Chip Cards in use are delivered from DIS with options for programming the following information onto the cards:

- ***Location ID***

This is an ID related to the location of the installation. The location ID prevents the card to be used at other locations. All cards for one installation shall have the same location ID.

The location ID has to be entered in the 'Setup/Equipment/Chipcard' menu in the SW 6000 – CAA application.

- ***Delegate ID***

This ID is used to identify the user in the Delegate database in SW 6000. Each card must have a unique ID (1, 2, 3 etc).

The information for each delegate in 'Delegate' in the SW 6000 – CAA application will also have a unique 'Delegate ID' corresponding to the cards.

When a card is inserted in a conference unit, the software will identify the user by matching the 'Delegate ID' in the 'Delegate' database with the 'Delegate ID' on the card.

- ***Login code***

This is the password used to log the user into the system.

User Controls & Indications

The units featuring chip card functionality will include the following controls and interfaces.

- ***Chip Card reader***

The Chip Card reader is used together with the DIS Chip Cards for identifying a user to the system. The Chip Card reader (and Chip Cards) can only be used together with the SW 6000 software.

When in use, the Chip Card is inserted in the chip card reader.

- ***Chip Card LED***

This LED lights yellow, if it is required to insert the Chip Card, with the exception of the DC 6990P that does not have an LED.

When inserted the LED lights RED if the card is not accepted and lights GREEN if the card is accepted.

DCS LAN Connectors

In addition to the connectors mentioned in the previous section the following connectors are available on all units:

- ***DCS-LAN connector***

Two RJ45 sockets are located at the back of the units for connecting to the previous unit (an IS 6132 Interpreter set, CS 6032 Channel Selector, DM 6xxx Delegate Unit, DC 6990 P Conference Unit, the CU 60xx Central Unit or any other unit with a DCS LAN connector) and to the next unit.

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System Setup

General guidelines

Connect the DCS 6000 Conference Units at the DIS-LAN connectors to the various units using Cat 5 FTP or STP screened cables. Please observe the following guidelines:

- Maximum cable length in one chain when not using repeaters is 200 m.
- Maximum cable length in one chain when using repeaters is 650 m

For more details about cabling and maximum number of units to connect to the DCS 6000 system please consult the CU 60xx User Manual.

Settings

There are no settings to be done on the DCS 6000 conference units. The units are automatically recognized and receive a unique address in the system, when connected to the unique DIS digital communication bus - the DCS-LAN.

Electrical termination of DCS LAN Network

Before powering up your DCS 6000 system, you must ensure that the DCS LAN Network has been properly terminated. The last unit in each chain must have a DCS LAN Network Termination Plug inserted in one of the two DCS LAN Network connectors (RJ45 connectors).

If the network is not terminated properly communication errors on the network may occur resulting in malfunction or degradation of the system performance.

4 pcs. of DCS LAN Network Termination Plug have been shipped with your DCS 6000 Central Unit.

Typical schematics

Please consult the CU 60xx User Manual for typical schematics

Starting up the system

When the DCS 6000 Conference Units are connected to a CU 60xx Central Unit and the proper termination are made, the CU can be switched ON.

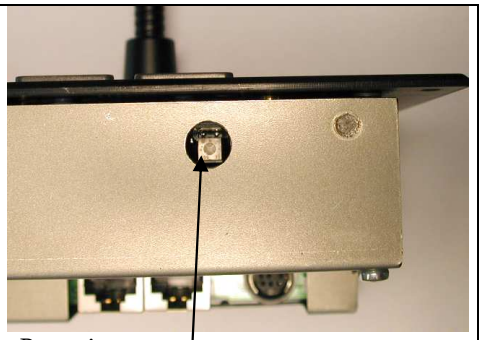
After powering up the system, the light-ring in DCS 6000 Conference Units will flash until the CU identifies the unit. As soon as this happens, the light-ring stop to flash and the unit is operational.

If a unit ‘looses’ the connection to the CU, it will start to flash until the connection is re-established.

Adjusting LCD contrast on units with channel selector

The contrast on the channel selector LCD display has been factory preset to a viewing angle of 45˚. The contrast can be changed to a different viewing angle through the procedure described below.

1	Get the contrast adjustment tool, which has been shipped with your DCS 6000 Central Unit (see photo 1). A new adjustment tool can be ordered through your authorized DIS dealer. Order DIS p/n P0 45 00010.	Photo 1
2	Connect the CM/DM 6xxxF to the DCS 6000 Central Unit and power up the system.	
3	Wait until text appears in the LCD display and the backlight is turned on.	
4	Locate the contrast adjustment hole in the back box of the unit (see photo 2). Units with two channel selectors have two adjustment holes in the back box, one for each of the LCD displays.	Contrast adjustment hole Photo 2
5	Carefully insert the tip of adjustment tool into the adjustment hole until the tip of the tool makes contact/lock with the potentiometer located behind the hole (see photo 3 and 4).	Insert tip of tool Photo 3

		 Photo 4
6	Turn the adjustment tool until the required contrast setting is obtained. Do not use excessive force when turning the tool, as this will cause the potentiometer to be damaged.	
7	Carefully extract the adjustment tool from the adjustment hole.	

Accessories

The following accessories are available for use with the DCS 6000 Conference Units:

GM 652x	**Gooseneck Microphones with XLR plug** The gooseneck microphones are available in various lengths. To be connected to the XLR microphone connector **Type** **Art No** GM 6523 Gooseneck mic, 40 cm .....18 12 05714 GM 6524 Gooseneck mic, 50 cm 18 12 05716	
HM 4042	**Hand Microphone with light ring** The HM 4042 Hand Microphone is designed for use with the MU 6040 C/D unit. The microphone is equipped with ON/OFF button, light ring as well as an indicator. With an extension cable the microphone can be connected to the MU 6040 to the HD15S connector or to the XLR connector on portable units. If connected to the XLR connector, the ON/OFF button as well as the indicator is not functioning. This indicator lights red when the microphone is ON and green when in request **Type** **Art No** HM 4042 Hand Microphone.....18 11 04474	

DH 6001H	**Delegate Headphone** This headphone is used with the built in channel selector. To be connected to the headphone connector **Type** **Art No** DH 6001H Delegate Headphone 14 11 03054	
DH 6021	**Delegate Stereo Headphone** This headphone is used with the DR 600x Receiver and DC 6990P. To be connected to the headphone connector **Type** **Art No** DH 6021 Delegate Headphone…… 14 11 03055	
FD/FC 4xxx	**Delegate/Chairman Front plates** An extensive range of standard front plates is available for use with MU 6040. Customised versions are available too The FD/FC Front Plates are connected to the HD15 connector	
CC 6010	**Chip Card** Chip card to use with Chip Card reader **Type** **Art No** CC 6010 Chip Card 10 04 03276	
JB 6002	**Junction Box** **Type** **Art No** JB 6002 Junction Box..... 15 09 05798	

JB 6004	**Junction Box** **Type** **Art No** JB 6004 Junction Box.....15 09 05758	
EC 6000 cables	**Cat 5e Connection Cables (AWG24)** The EC 6000 cables are used to connect the various units in the DCS 6000 system using the DCS-LAN connector: **Type** **Art No** EC 6001-..5 Connection Cable 0,5 m ..10 03 22500 EC 6001-01 Connection Cable 1 m .....10 03 23101 EC 6001-02 Connection Cable 2 m .....10 03 23201 EC 6001-05 Connection Cable 5 m .....10 03 23501 EC 6001-10 Connection Cable 10 m ...10 03 24102 EC 6001-20 Connection Cable 20 m ...10 03 24202 EC 6001-30 Connection Cable 20 m ...10 03 24302 EC 6001-50 Connection Cable 50 m ...10 03 24502	
CO 6000 RJ45 terminator	**DCS-LAN Termination plug** **Type** **Art No** CO 6000 RJ45 terminator x 5.....15 52 04911	

Appendix

Technical appendix

Cabling

CAT5

The DCS 6000 system uses CAT5, CAT5e or CAT6 FTP or STP cables with screened RJ45 connectors.

EIA 568-B wiring shall be used.

It is important to use only FTP or STP (screened) cables and screened RJ45 connectors and not UTP cable, which is unscreened.

How to wire a CAT5 (EIA 568-B) Cable:

Pin	Function	Connector #1	Connector #2
1	In-going +	ORG/WHT	ORG/WHT
2	In-going -	ORG	ORG
3	+48V	WHT/GRN	WHT/GRN
4	0V	BLU	BLU
5	0V	BLU/WHT	BLU/WHT
6	+48V	GRN	GRN
7	Outgoing -	BRN/WHT	BRN/WHT
8	Outgoing +	BRN	BRN

Note. If other colour codes are used then the four pairs are connected as follows:

Pair 1: Pin 1 & 2

Pair 2: Pin 3 & 6

Pair 3: Pin 4 & 5

Pair 4: Pin 7 & 8

The phase of the pairs must be correct and the wiring specifications as stated in CAT5 (EIA 568-B) have to be followed.

HD15 connector

The HD15 connector on the MU 6040 D/C and MU 6042 has the following PIN layout:

Pin	Signal	Cable type
1	- Loudspeaker output	DIS type: #2029 or according to the specific installation.
2	Speak 1 LED	
3	Request 1 LED	
4	ON/OFF 1 button input	
5	Delegate OFF button / *ON/OFF 2 button input	
6	Optional input	
7	+ Loudspeaker output (8 ohm)	
8	NC	
9	*Speak 2 LED	
10	+ lamp	
11	+5V	
12	0V	
13	MIC ground	
14	+ MIC	
15	*Request 2 LED	

**** Only connected on MU 6042***

Connection of GM 652x to AM/MU 6040

AM/MU 6040 – HD 15		GM 652x – XLR 3P	
Pin	**Comments**	**Pin**	**Comments**
10	+ lamp	4	House
12	0V	3	
13	MIC ground	1	
14	+ MIC	2	

Technical specifications

Digital Section

Microphone type ..... Electret Cardioid

Microphone sensitivity ..... -22 DbV/Pa

Max. SPL ..... 125 dB (3% THD)

Equivalent noise ..... App. 20 dB SPL

Loudspeaker freq. Range ..... 150 Hz – 15 kHz

Loudspeaker max. Power ..... 3W RMS

Sound quality ..... 20 bit audio @ 32 kHz sampling frequency

Frequency response ..... 65 Hz-16 kHz

Signal to noise ratio: ..... >85 dBA

Total harmonic distortion: ..... < 0.1%

General

Power requirement ..... 24-48 V DC

Power consumption ..... 1W to 3W

Power supplied from CU 60xx / EX 6010 / PS 6000

Temperature to guarantee specified performance

..... 5 Deg C. to 40 Deg C. (35 to 80% humidity)

Storage temperature

..... -20 Deg C. to 60 Deg C. (10 to 80% humidity)

Connectors

DCS-LAN loop through 2 pieces RJ45

DC 6990 P Conference Unit

LCD Display Life Time ..... >10.000 hours

Specifications are subject to change without notice.